股票代號：6568

宏觀微電子股份有限公司

Rafael Micro

Ted Sun

12/10 2019

Safe Harbor Statement

Except for historical information contained herein, the matters set forth in this presentation are forward looking statements that are subject to risks and uncertainties that could cause actual results to differ materially, including the impact of competitive products and pricing, timely design acceptance by our customers, timely introduction of new technologies, ability to ramp new products into volume, industry wide shifts in supply and demand for semiconductor products, industry overcapacity, availability of manufacturing capacity, financial stability in end markets, and other risks.

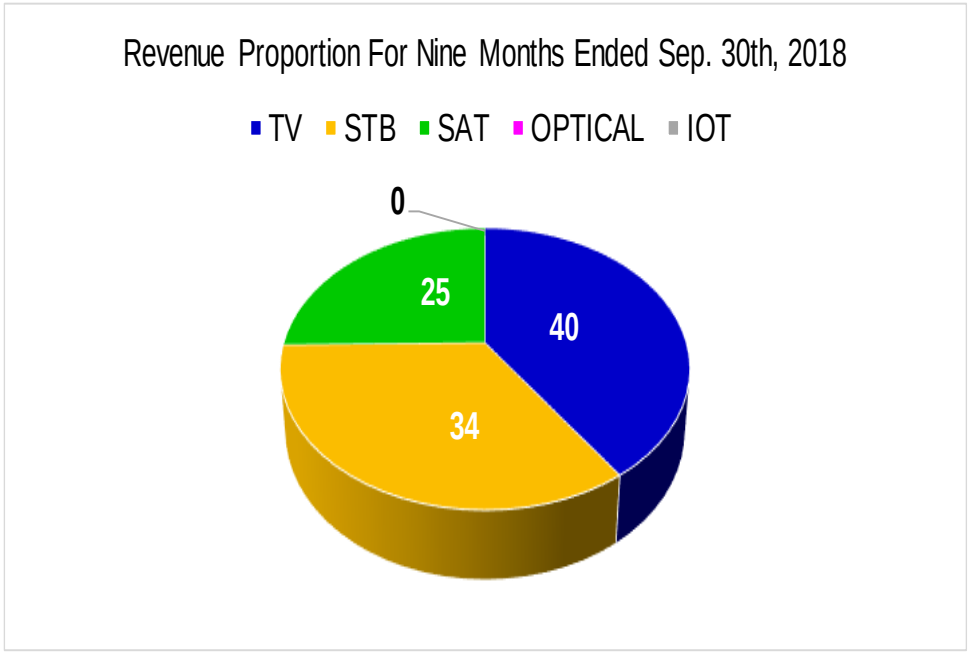
2019年前11個月營收-產品線別

- Both IoT and Optics product lines shall become new growth momentum in 2020.

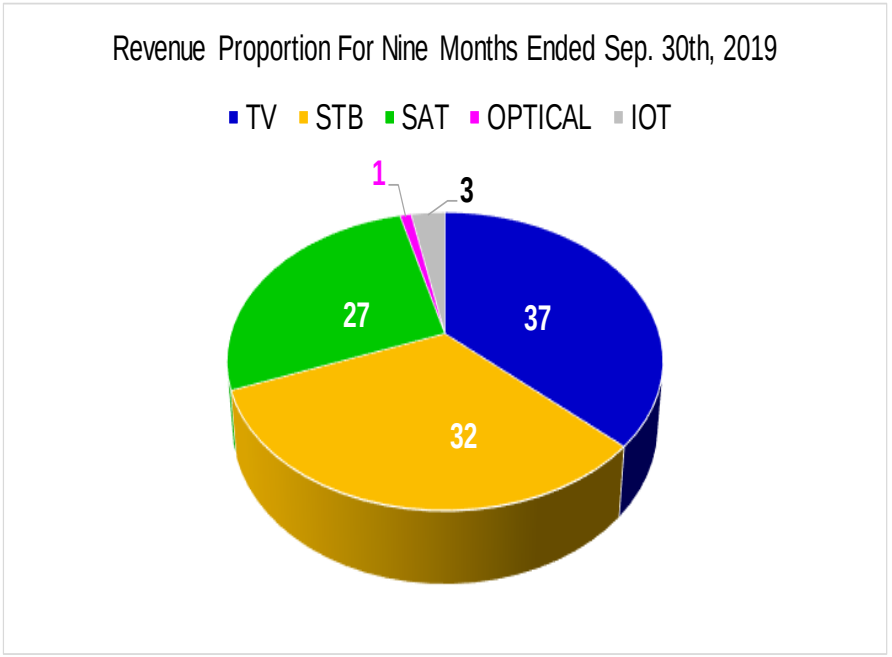
Unit:NT$K；%

Revenue	Eleven Months Ended Nov. 30th		YOY(%)
	2018	2019	
TV	385,302	388,701	0.88
STB	347,152	331,938	(4.38)
SAT	271,039	274,944	1.44
Optical Fiber	5,316	17,955	237.75
IOT	2,607	24,754	849.52
Total	1,011,416	1,038,292	2.66

2019年前三季營收-產品線別



Total Rev. for Nine Months Ended Sep. 30th, 2018=NT$801,249K



Total Rev. for Nine Months Ended Sep. 30th, 2019=NT$867,816K

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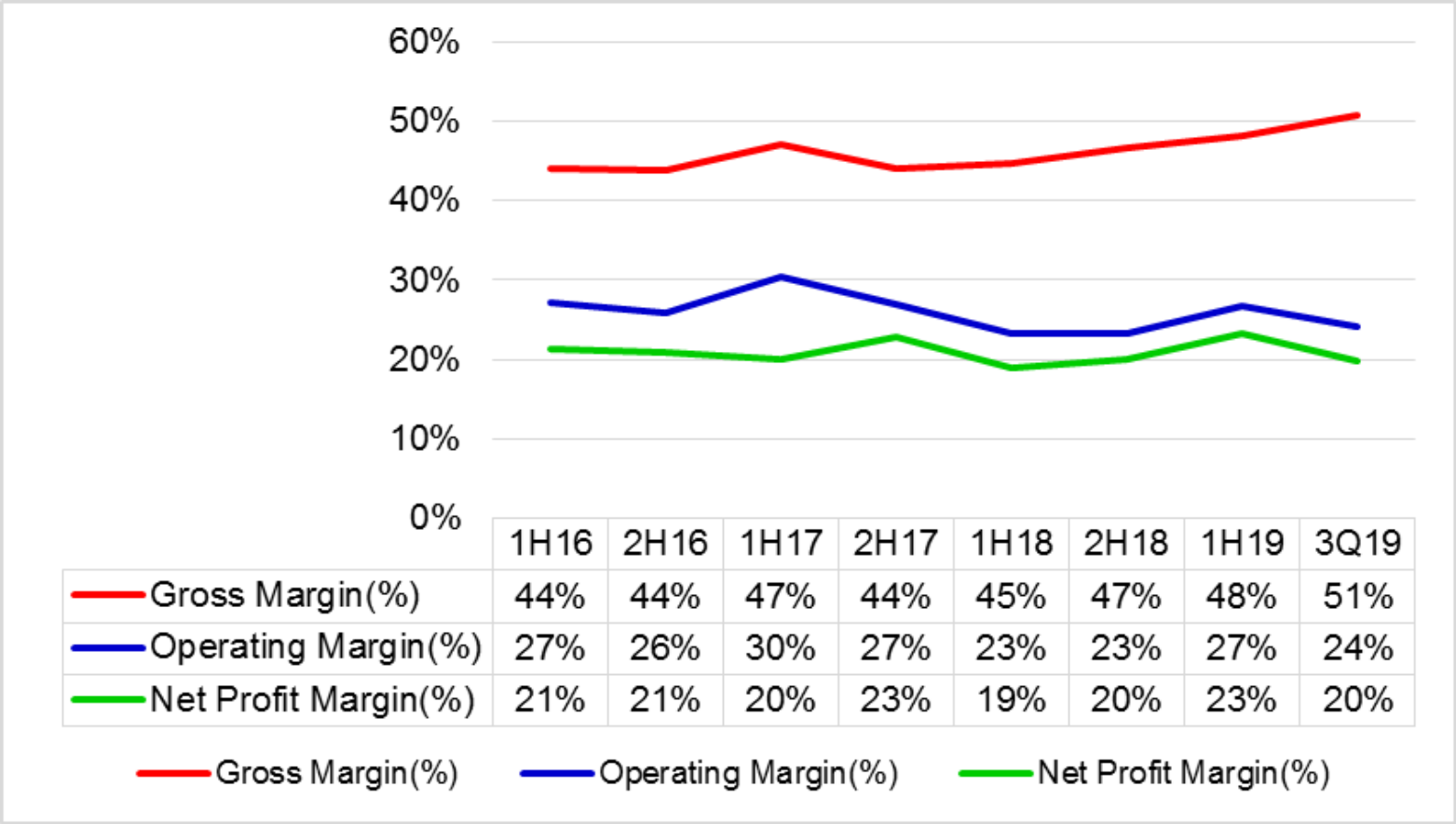
財務績效指標(1/2)



	1H16	2H16	1H17	2H17	1H18	2H18	1H19	3Q19
Gross Margin(%)	44%	44%	47%	44%	45%	47%	48%	51%
Operating Margin(%)	27%	26%	30%	27%	23%	23%	27%	24%
Net Profit Margin(%)	21%	21%	20%	23%	19%	20%	23%	20%

	Y2016	Y2017	Y2018	2019 Nine Months
EPS(NT$)	10.56	9.65	8.85	7.73
Dividend(NT$)	5.00	5.00	6.00	

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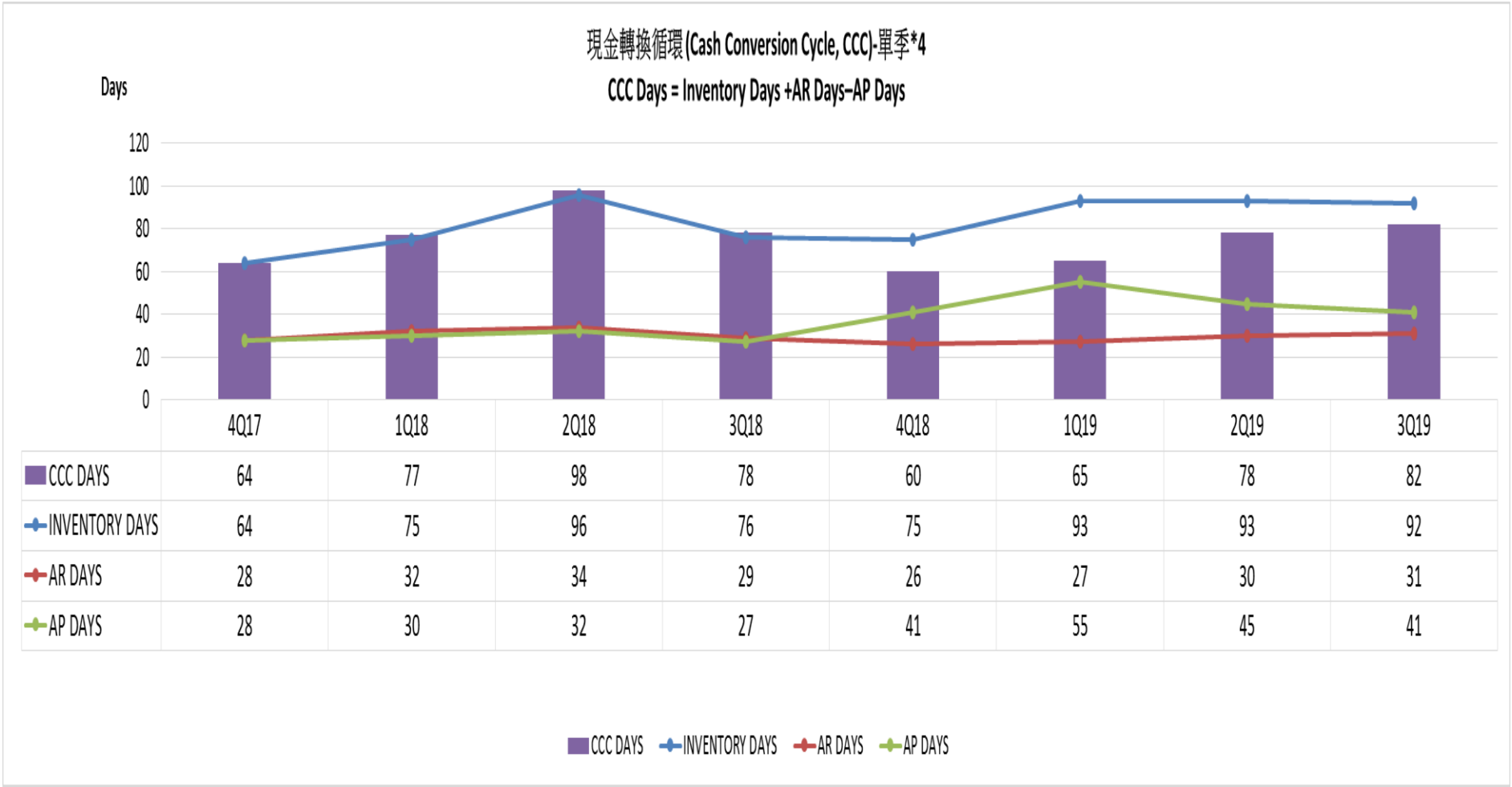
財務績效指標(2/2)

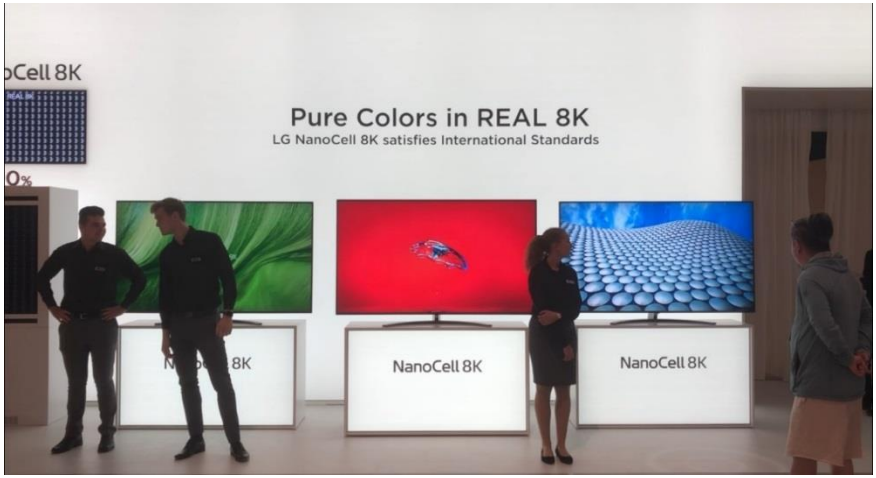
- Inventory policy and highly professional management reduce our financial risk.



	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19
CCC DAYS	64	77	98	78	60	65	78	82
INVENTORY DAYS	64	75	96	76	75	93	93	92
AR DAYS	28	32	34	29	26	27	30	31
AP DAYS	28	30	32	27	41	55	45	41

電視產品線

- Market penetration continues increasing at major China TV manufacturers due to China-US trade war.
- Developing non-China markets will further increase global market share.
- 8K TV market is growing steadily with Korean and Japanese customers in production and/or design-in processes.



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機上盒產品線 & 衛星產品線

- Both STB and satellite LNB markets were soft in 2019 but we expect markets will recover in 2020.
- India dual-tuner cable STB tender is won and expecting shipment in 1H20.
- Top tier brand name STB is in development which will add growth momentum in 2020.
- Rafael Micro will benefit from more LNB demand moving from low-end Single LNB to high-end Twin/Quad LNB.

未來的5G世界_透過無線裝置與高速光纖連結

- Massive wireless connectivity and IOT
- Lots of Fiber Optics

“The Road to 5G is Paved with Fiber” - Fiber Broadband Association

擴增高速射頻與通訊射頻產品

HDTV
RF Receiver IC

1

Fiber Optics IC

4

Terrestrial & Cable STB
RF Receiver IC

2

Wireless Connectivity

5

Satellite TV Signal
Reception & Distribution

3

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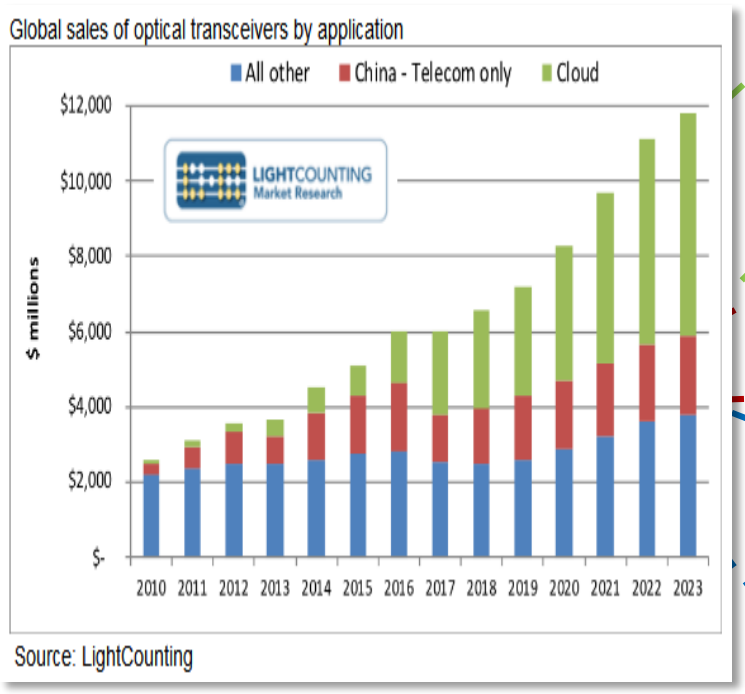
研發高頻光纖的積體電路
On Data Center, 5G, FTTH and UHD Display



- **25G SR / 100G SR4**
  TIA + LA + CDR
  Driver + CDR
- **25G** LR TIA
- **10G** PON / XGS PON
- China Optical CATV
- **24G / 48G** HDMI AOC
- Display Port

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廣電應用於光纖到戶的CATV光接收晶片

- Shipping Optical Receiver to China's FTTH 4K broadcast ecosystem.
- Win more than 50% of ARFT (廣電) tender.
  Win H's ONU + CATV tender.
- Expect at least double shipment in 2020.

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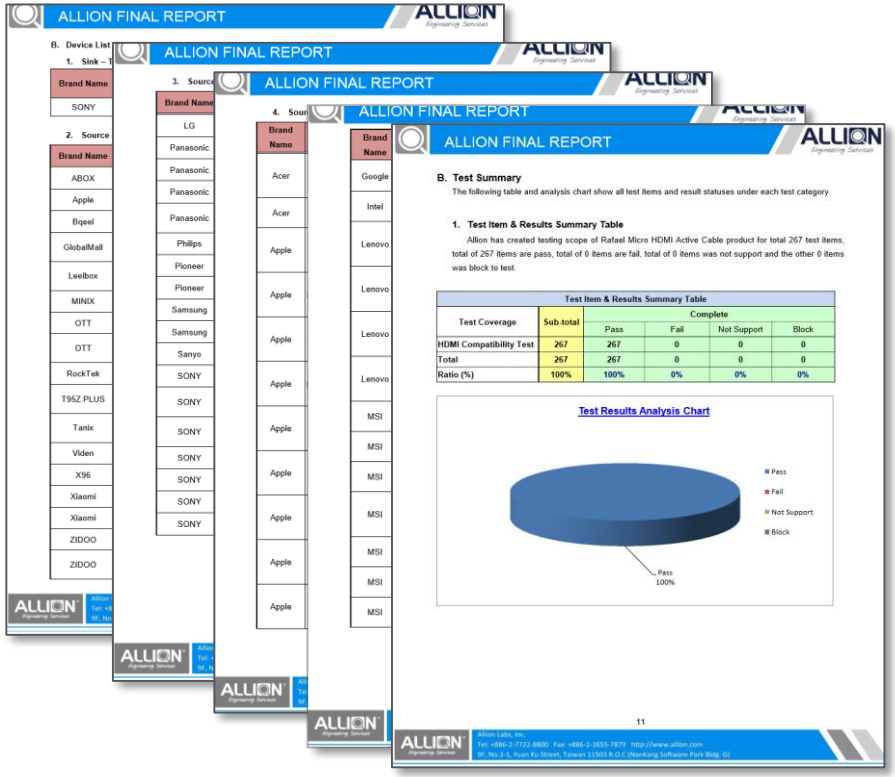
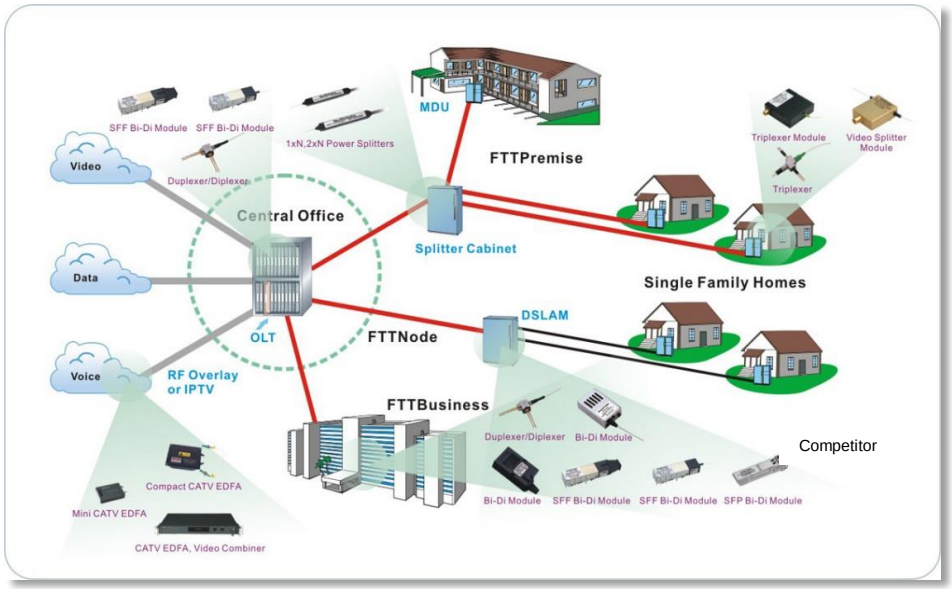
量產HDMI AOC收發晶片
Passed HDMI Lab Compatibility Test

- RT180/RT181 supports HDMI 2.0 and Display Port 1.4 Active Optical Cable (AOC) for consumer and VR applications.
- Design win at several Taiwan and China module makers, expecting in volume shipment in 1Q20.
- Industry's best compatibility through total 89 different source devices tested in HDMI 3rd Party Lab.



量產10G PON TIA晶片
Passed Anti-WiFi Interference Test

- China is taking-off for FTTH 10G PON deployment.
- Both 10G PON and 25G LR are important devices for 5G infrastructure.
- Rafael's 10G PON TIA has the industry's best anti-WiFi Interference capability which is crucial in PON ONU design.
- Design wins at 10G PON customers and expecting volume shipment in 1H20.



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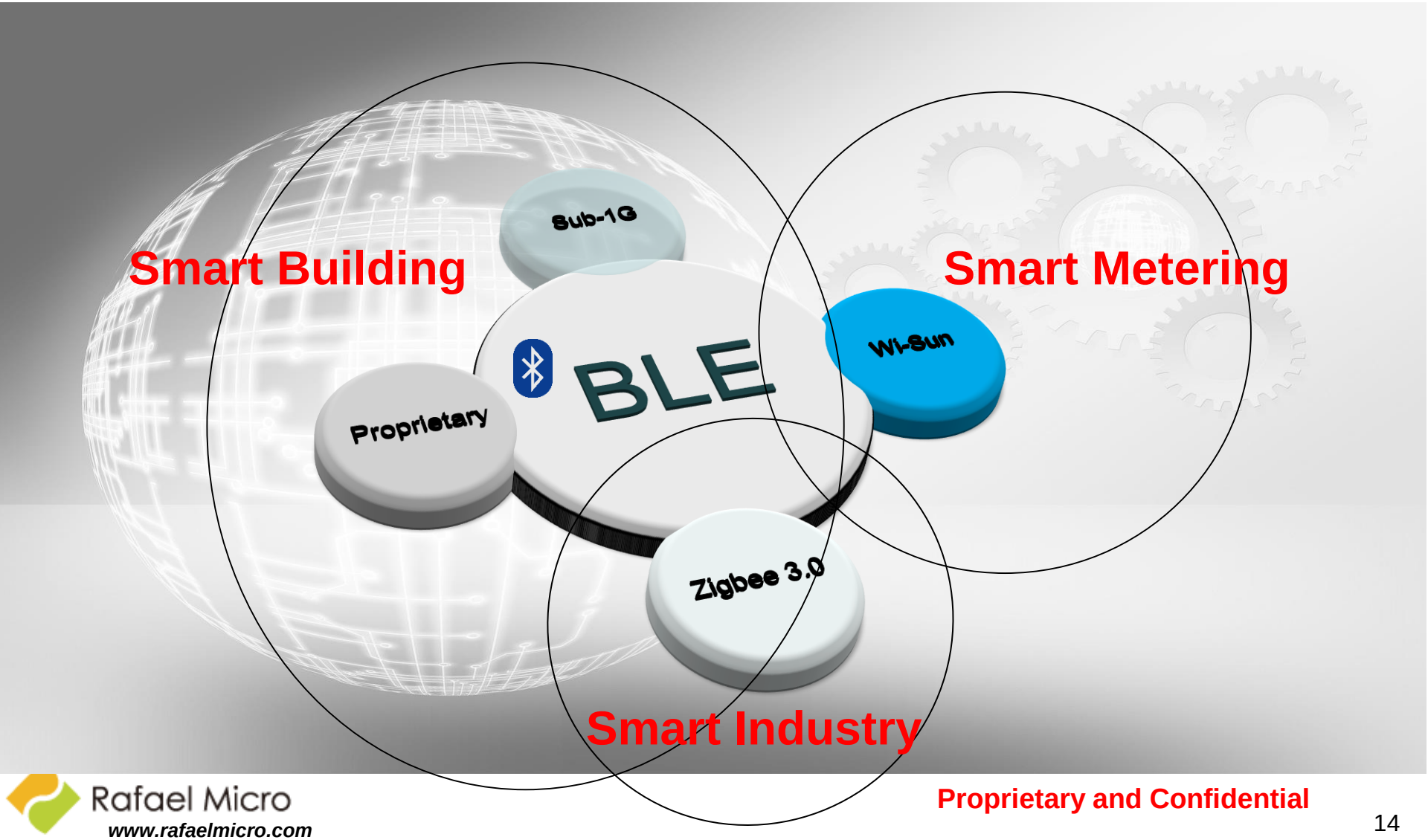
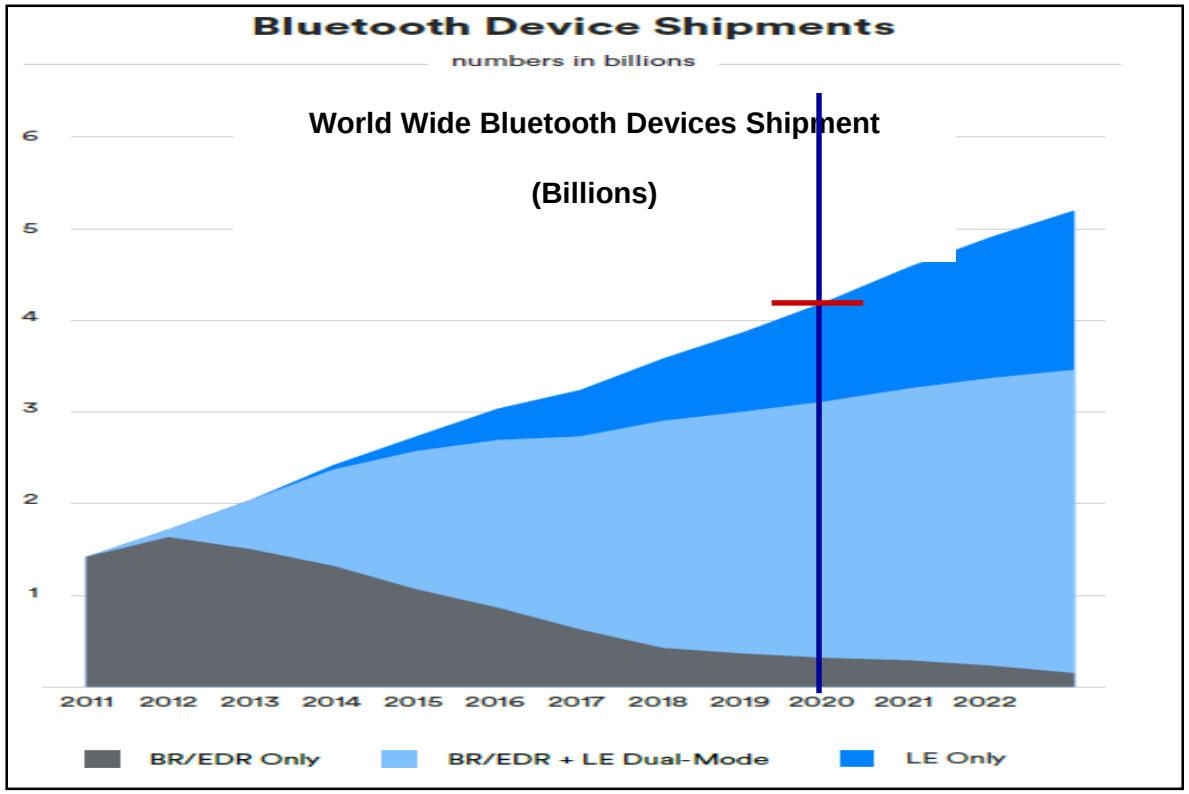
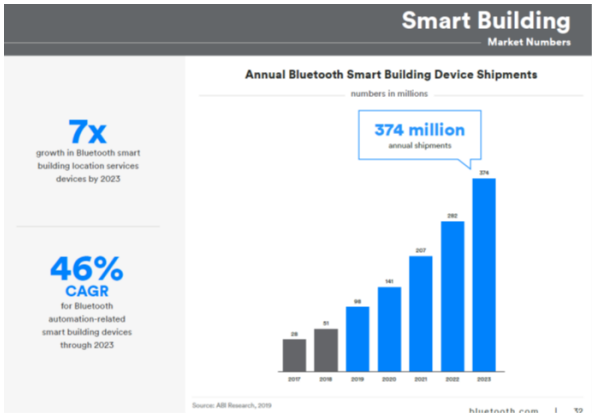
擁抱物聯網商機

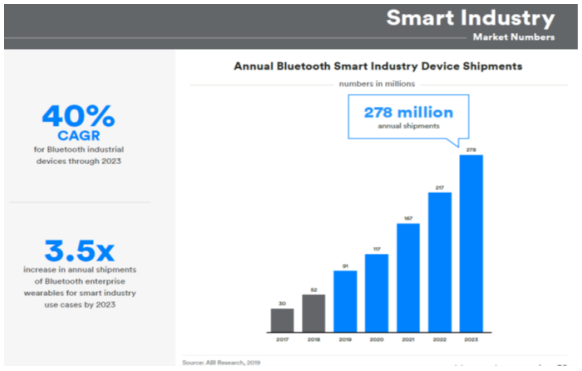
Participate in Smart Network Ecosystem with Rafael Micro Low Power Wireless RF Technologies



無線裝置連結的巨大商機
4B units in 2020







高效能、差異化的物聯網技術

- Rafael Micro's low power technology enables IoT devices with ultra low current (<1uA) in sleep mode

- Rafael Micro's RF anti-interference technology demonstrates superior ACI capability and beats all leading competitors

- Rafael Micro's PA technology delivers outstanding linear high power >10dB to enable long-range mesh functionality

- Industry's smallest transceiver is achieved targeting dual mode high performance / high-end markets

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物聯網專案的進展

- Cooperating with one of the tier-1 MCU manufactures to provide MCU+BLE SIP ICs to penetrate fragmented IOT Markets
- Working with one of the major finger-print system houses to provide cost-effective solutions for home security and automation
- Secured Design Win with one of the major Smart City metropolitan operators in China to provide ASIC SoC for next generation IoT communication solutions
- Participating with one of the key partners related to State-Grid (China) to provide reading and management solutions for smart meters

BLE無線裝置的應用

- IOT becomes part of AIOT Ecosystem and new opportunities are generated as 5G networks start to be deployed
- The ONLY low power connectivity accessible by Mobile phone is BLE and 90% of Bluetooth devices will include BLE by 2023
- Market highly recognizes and welcomes Rafael Micro's business model providing high performance Chiplet, IP and ASIC SoC
- Continuing to gain market momentum as applications of BLE mesh, BLE positioning (5.1) and BLE audio (6.0) start to be realized

結　論

- In addition to existing markets, the progress of developing non-China markets for mainstream products is increasingly promising.
- Both IoT and Optics product lines shall become new growth momentum in 2020.
- Preparing for 5G echo applications, Rafael Micro is Expanding its core technology from Broadband RF to:
  (1) RF with Digital Communication Capabilities
  (2) High Frequency RF


Q and A